



Reference: 004323

November 22, 2005

Mr. Mark Verhey
Humboldt County Division of Environmental Health
100 H Street, Suite 100
Eureka, CA 95501

Subject: Third Quarter 2005 Groundwater Monitoring Report, Former Rio Dell Texaco, 100 Wildwood Avenue; LOP No. 12691

Introduction

This letter report comprises the third quarter 2005 groundwater monitoring report for the former Rio Dell Texaco, Rio Dell, Humboldt County, California. This report includes a brief discussion on the background of the site, field activities, groundwater monitoring results, and discussion and recommendations. This work is being performed at the request of the Humboldt County Division of Environmental Health (HCDEH).

Vicinity Information

The site is located at 100 Wildwood Avenue in Rio Dell, Humboldt County, California, at the northeast corner of the intersection of Wildwood Avenue and Edwards Drive (Figure 1). A site plan is included as Figure 2.

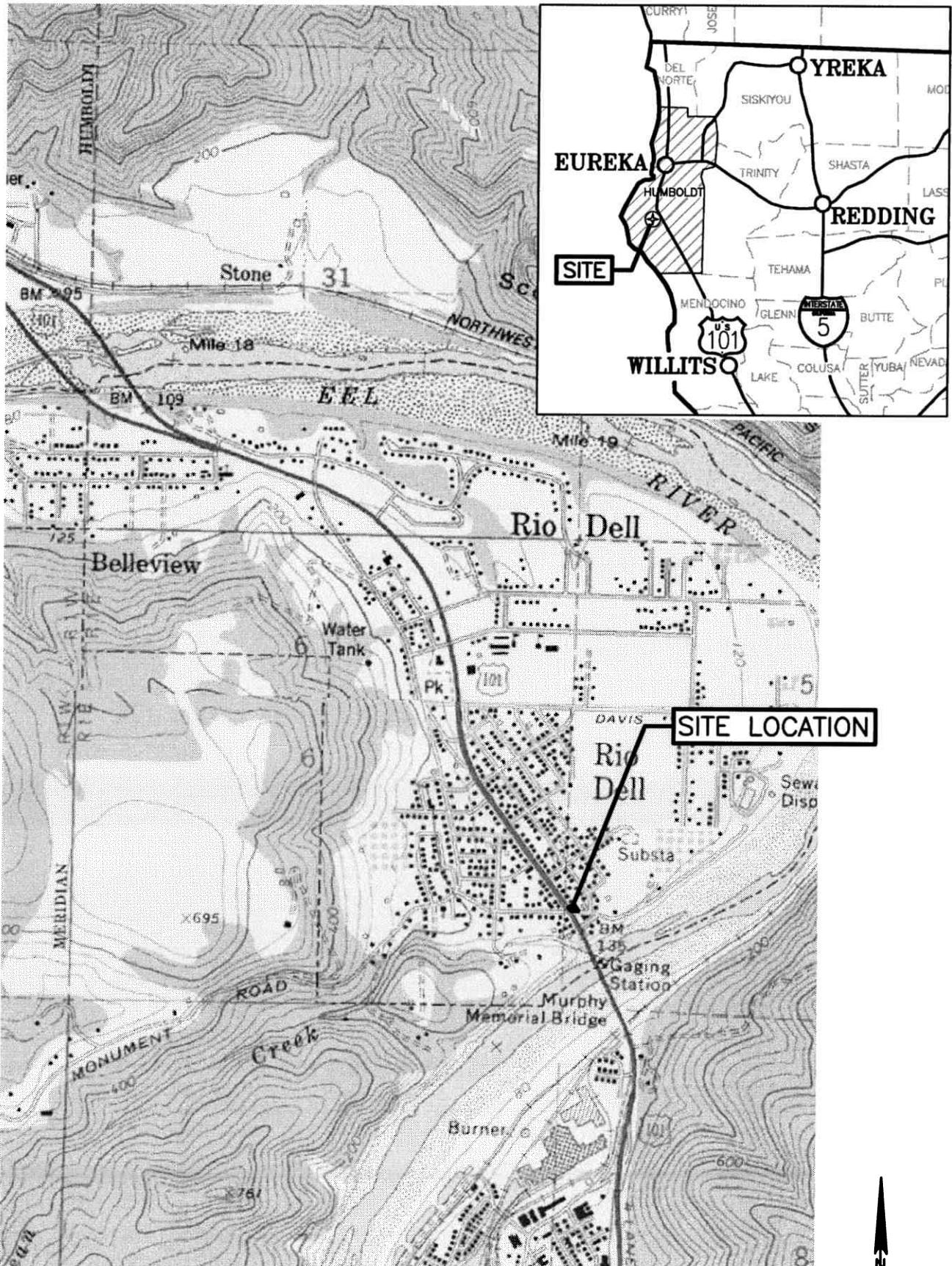
Background

In December 1990, a 200-gallon waste oil Underground Storage Tank (UST) was removed from the site. Contaminated soils were excavated from the vicinity of the waste oil UST in August 1992. Laboratory analytical results of soil and groundwater samples collected during the overexcavation indicated the presence of petroleum hydrocarbons in soil, but not in groundwater. In November 1996, the HCDEH issued a remedial action completion certificate for the waste oil UST (LACO, 1998).

In September and October 1998, Northcoast Environmental Construction removed 6 USTs from the site. Low concentrations of petroleum hydrocarbons were detected in several soil samples from the excavation cavities (LACO, 1998). In February 2000, LACO Associates (LACO) installed 6 soil borings (B-1 through B-6) and 4 monitoring wells (MW-1 through MW-4), and initiated quarterly groundwater monitoring and sampling (LACO, 2000).

In 2001, LACO performed a sensitive receptor survey for a 1,000-foot radius from the site. Two active wells were identified within the search area; one well was reportedly used for irrigation, and the other for domestic use and irrigation. Both wells are located cross gradient of the site (LACO, February 2002).

In March and April 2002, LACO installed 8 additional soil borings/temporary well points (B-7 through B-14) at the site (LACO, June 2002).

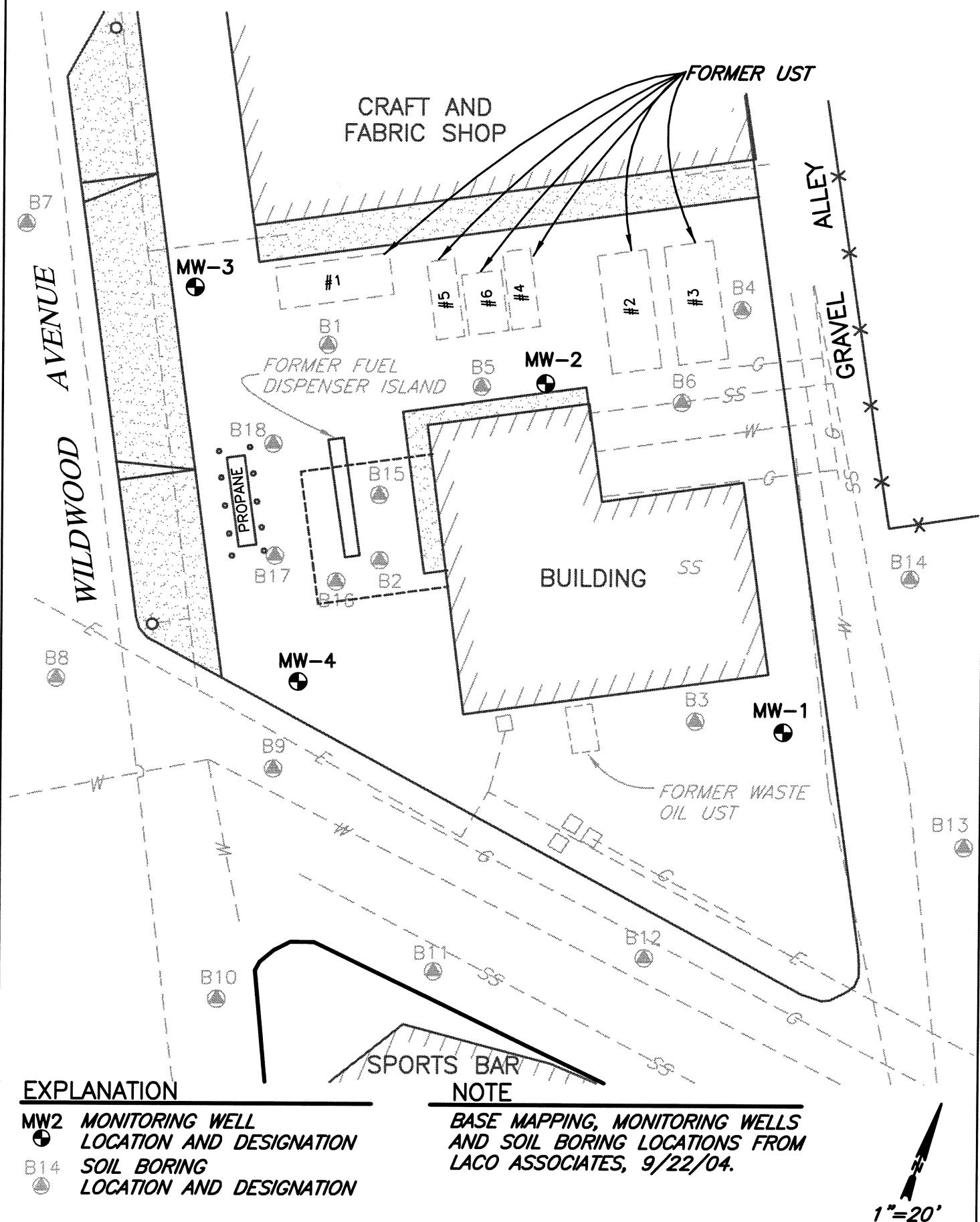


SOURCE: SCOTIA AND RIO DELL
USGS 7.5 MINUTE QUADRANGLES

1" = 1,500' ±

 Consulting Engineers & Geologists, Inc.	Former Rio Dell Texaco Rio Dell, California	Site Location Map SHN 004323
	January, 2005	004323-FIG-1

Figure 1



1"=20'

Mark Verhey

Former Rio Dell Texaco Third Quarter 2005 Groundwater Monitoring Report; LOP No. 12691

November 22, 2005

Page 2

In January 2004, LACO installed 4 additional soil borings/temporary well points (B-15 through B-18) at the site (LACO, 2004).

Historic groundwater monitoring data collected by LACO are included in Attachment 1.

Field Activities

Monitoring Well Sampling

On August 23, 2005, SHN conducted quarterly groundwater monitoring of site monitoring wells MW-1 through MW-4. Prior to sample collection, each well was checked for the presence of free product (none was observed), and measured for depth to groundwater to the nearest 0.01 foot. Approximately 3 casing volumes of water were subsequently purged from each monitoring well, using a disposable bailer. Electrical conductivity, pH, and temperature were monitored periodically during purging activities using portable instrumentation. Each groundwater well was also monitored for Dissolved Oxygen (DO), Oxidation-Reduction Potential (ORP), and Dissolved Carbon Dioxide (DCO₂).

Groundwater samples were collected from each monitoring well, using disposable polyethylene bailers, and transferred into laboratory-supplied bottles. The water samples were then labeled, stored in an iced cooler, and transported to the analytical laboratory under proper chain-of-custody documentation. Groundwater monitoring data sheets are included in Attachment 2.

Laboratory Analysis

Each groundwater sample was analyzed for:

- Total Petroleum Hydrocarbons as Gasoline (TPHG); Benzene, Toluene, Ethylbenzene, and total Xylenes (BTEX); Methyl Tertiary-Butyl Ether (MTBE); Tertiary-Butyl Alcohol (TBA); Diisopropyl Ether (DIPE); Ethyl Tertiary-Butyl Ether (ETBE); and Tertiary-Amyl Methyl Ether (TAME) in general accordance with United States Environmental Protection Agency (EPA) Method No. 8260B.
- Alkalinity in general accordance with Standard Method 19th Edition 2320B.
- Nitrate and sulfate in general accordance with EPA Method No. 300.0.
- Dissolved iron and dissolved manganese in general accordance with EPA Method No. 200.7.

Groundwater samples were submitted to North Coast Laboratories, Inc., a State of California-certified analytical laboratory located in Arcata, California.

Equipment Decontamination Procedures

All small equipment that required on-site cleaning was cleaned using the triple wash system. The equipment was first washed in a water solution containing Liquinox® cleaner, followed by a distilled water rinse, then by a second distilled water rinse.

Mark Verhey

Former Rio Dell Texaco Third Quarter 2005 Groundwater Monitoring Report; LOP No. 12691

November 22, 2005

Page 3

Investigation-Derived Waste Management

Water used in the decontamination of equipment, tools, and all purge water was contained in Department of Transportation-approved DOT 17E/H, 55-gallon drums. The water was transported to SHN's purge water storage facility and discharged, under permit, to the City of Eureka wastewater collection system. A total of 20 gallons of water were generated during this monitoring event. Discharge receipts for water generated during the second and third quarter 2005 monitoring events are included in Attachment 2.

Groundwater Monitoring Results

Hydrogeology

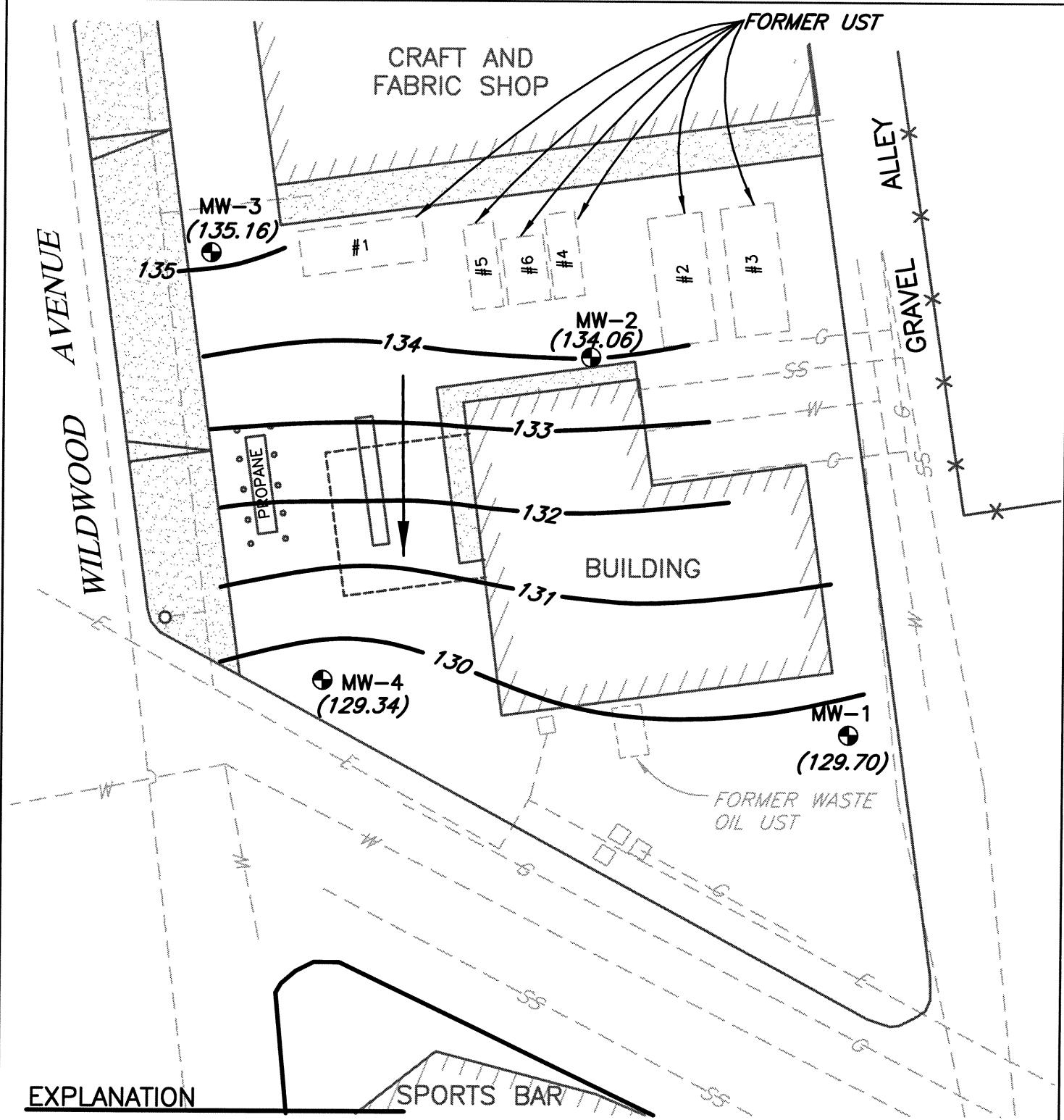
Depth to groundwater measurements were collected on August 23, 2005. The direction of groundwater flow was to the south-southeast with an approximate gradient of 0.10 (Figure 3). Groundwater elevations are presented in Table 1. Historic groundwater elevation data collected by SHN are included in Attachment 3.

Table 1 Groundwater Elevations, August 23, 2005 Former Rio Dell Texaco, Rio Dell, California			
Sample Location	Top of Casing Elevation (feet)¹	Depth to Water (feet)²	Groundwater Elevation (feet)¹
MW-1	139.06	9.36	129.70
MW-2	139.83	5.77	134.06
MW-3	139.87	4.71	135.16
MW-4	139.00	9.66	129.34

1. Referenced to NAVD88.
2. Below top of casing.

Groundwater Analytical Results

Groundwater was sampled from each well on August 23, 2005. Analytical results are presented in Table 2 and summarized on Figure 4. Historic groundwater analytical data collected by SHN are included in Attachment 3. The laboratory analytical report is presented in Attachment 4.

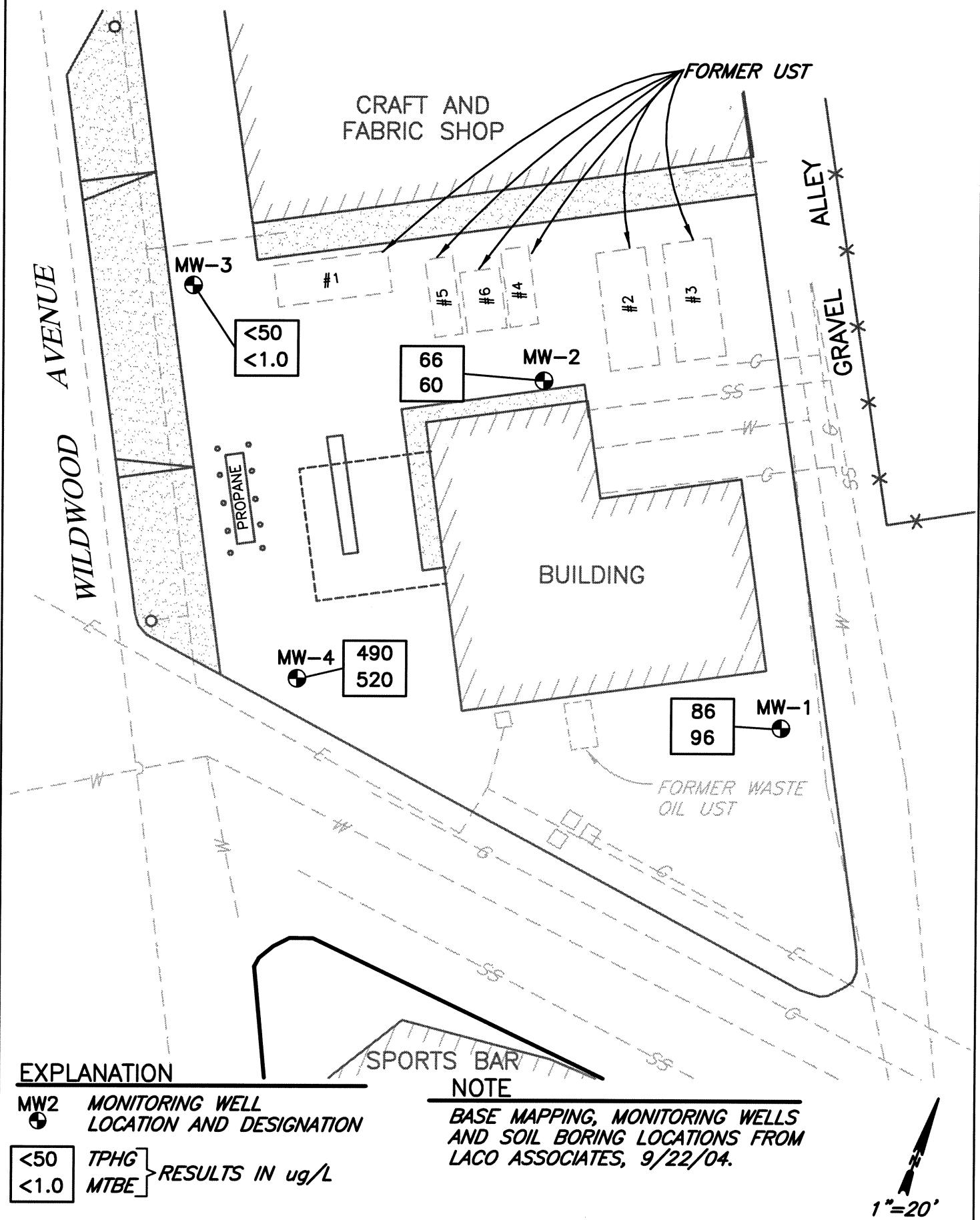


EXPLANATION

- MW2 MONITORING WELL LOCATION AND DESIGNATION**
 (129.70) GROUNDWATER ELEVATION IN FEET (MSL)
— 132 — GROUNDWATER CONTOUR
→ APPROXIMATE DIRECTION OF GROUNDWATER FLOW

NOTE
 BASE MAPPING, MONITORING WELLS AND SOIL BORING LOCATIONS FROM LACO ASSOCIATES, 9/22/04.

1"=20'



1"=20'

Mark Verhey

Former Rio Dell Texaco Third Quarter 2005 Groundwater Monitoring Report; LOP No. 12691

November 22, 2005

Page 4

Table 2
Groundwater Analytical Results, August 23, 2005
Former Rio Dell Texaco, Rio Dell, California
(in ug/L)¹

Sample Location	TPHG ²	B ²	T ²	E ²	X ²	MTBE ²	TBA ²	DIPE ²	ETBE ²	TAME ²
MW-1	86 ³	<0.50 ⁴	<0.50	<0.50	<0.50	96	<10	<1.0	<1.0	<1.0
MW-2	66 ³	<0.50	<0.50	<0.50	<0.50	60	<10	<1.0	<1.0	2.5
MW-3	<50	<0.50	<0.50	<0.50	<0.50	<1.0	<10	<1.0	<1.0	<1.0
MW-4	490 ³	<0.50	<0.50	<0.50	<0.50	520	<10	<1.0	<1.0	5.6

1. ug/L: micrograms per Liter.

2. Total Petroleum Hydrocarbons as Gasoline (TPHG), Benzene (B), Toluene (T), Ethylbenzene (E), total Xylenes (X), Methyl Tertiary-Butyl Ether (MTBE), Tertiary-Butyl Alcohol (TBA), Diisopropyl Ether (DIPE), Ethyl Tertiary-Butyl Ether (ETBE), and Tertiary-Amyl Methyl Ether (TAME) analyzed in general accordance with United States Environmental Protection Agency (EPA) Method No. 8260B.

3. The reported gasoline value is primarily the result of reported gasoline additives present in the sample.

4. <: Denotes a value that is "less than" the method detection limit.

Natural Attenuation Parameters

DO, ORP, and DCO₂ were measured in the monitoring wells prior to sampling. Results are presented in Table 3.

Table 3
DO, DCO₂, and ORP Measurement Results, August 23, 2005
Former Rio Dell Texaco, Rio Dell, California

Sample Location	DO ¹ (ppm) ²	DCO ₂ ³ (ppm)	ORP ⁴ (mV) ⁵
MW-1	2.04	60	199
MW-2	0.75	50	183
MW-3	0.88	35	144
MW-4	0.76	130	188

1. DO: Dissolved Oxygen, field measured using portable instrumentation.

2. ppm: parts per million.

3. DCO₂: Dissolved Carbon Dioxide, field measured using a field test kit.

4. ORP: Oxidation-Reduction Potential measured using portable instrumentation.

5. mV: millivolts

DO concentrations ranged from 0.75 parts per million (ppm) in well MW-2 to 2.04 ppm in well MW-1. The DCO₂ measurements ranged from 35 ppm in well MW-3 to 130 ppm in well MW-4. ORP measurements collected from all site wells indicate that oxidizing conditions exist in groundwater beneath the site. These results indicate that biodegradation is occurring at the site. Historic DO, ORP, and DCO₂ measurement results collected by SHN are included in Attachment 3.

Several geochemical parameters were analyzed from each groundwater sample to further assess if biodegradation is occurring. Results are presented in Table 4.

Table 4 Groundwater Geochemical Analytical Results, August 23, 2005 Former Rio Dell Texaco, Rio Dell, California					
Sample Location	Dissolved Iron (ug/L)¹	Dissolved Manganese (ug/L)	Nitrate (mg/L)²	Sulfate (mg/L)	Total Alkalinity (mg/L)
MW-1	150	24	3.0	18	170
MW-2	<100 ³	1,700	0.15	34	250
MW-3	<100	51	0.97	24	97
MW-4	810	1,800	<0.10	7.5	460

ug/L: micrograms per liter
mg/L: milligrams per liter
<: Denotes a value that is "less than" the method detection limit.

Natural Attenuation (NA) is the reduction in mass or concentration of a chemical in groundwater over time or distance from the source of contamination due to naturally occurring physical, chemical, and biological processes (Barden, 2002). These processes include dispersion (dilution), sorption of contaminants to soil particles, volatilization, biodegradation of contaminants by naturally occurring organisms, or abiotic degradation/transformation (Wiedemeier, 2002).

Three lines of evidence (Wiedemeier et al., 1999) that can be used to support MNA are:

- documented loss of contaminants in monitoring wells over time,
- contaminant and geochemical analytical data, and
- direct microbiological evidence.

Table 5 (next page) shows trends expected in groundwater when NA is occurring, and compares data from MW-4 (the most impacted well) to assumed background conditions in well MW-3. All of the measured and analytical parameters (except ORP) followed the expected trends when natural attenuation of contaminants is occurring, however, ORP measurements collected during this monitoring event indicate that oxidizing conditions exist in groundwater beneath the site.

Table 5
MNA Indicator Comparison, August 2004
Former Rio Dell Texaco, Rio Dell, California

Groundwater Bioremediation Parameter	Units	Expected Trend for Source Well Related to Background	Source Well MW-4	Background Well MW-3	Consistent with Trend
Dissolved Oxygen	ppm ¹	Decreases	0.76	0.88	Yes
Dissolved Carbon Dioxide	ppm	Increases	130	35	Yes
Oxidation-Reduction Potential	mV ²	Decreases	188	144	No
Dissolved Iron	ug/L ³	Increases	810	<100	Yes
Dissolved Manganese	ug/L	Increases	1,800	51	Yes
Nitrate	mg/L ⁴	Decreases	<0.10	0.97	Yes
Sulfate	mg/L	Decreases	7.5	24	Yes
Alkalinity	mg/L	Increases	460	97	Yes

Discussion and Recommendations

TPHG was detected in the groundwater samples from monitoring well MW-1, MW-2, and MW-4. However, the analytical laboratory noted that the reported TPHG concentration was actually fuel oxygenate constituents that eluted in the TPHG range of molecular weights. Due to the similarity in TPHG concentrations to MTBE concentrations found in site wells, it appears that petroleum hydrocarbons being reported as TPHG is actually MTBE that is eluting in the TPHG range of molecular weights.

The biodegradation indicators indicate that biodegradation of petroleum hydrocarbons is occurring.

SHN recommends continued groundwater monitoring as required by the HCDEH. Prior to groundwater sampling, wells will be checked for depth to water, and monitored for DO, DCO₂, and ORP. Wells will be purged of approximately 3 well casing volumes prior to sampling. During well purging, groundwater will be monitored for temperature, pH, and conductivity. Groundwater samples will be analyzed for TPHG, BTEX, and fuel oxygenates.

SHN will complete and submit the next quarterly monitoring report, no later than 60 days following the quarterly sampling event. The report will include a description of the monitoring and sampling activities, a summary of results, analytical reports, groundwater elevations, and groundwater contour maps. The next quarterly groundwater-monitoring event is scheduled for November 2005.

In October 2005, SHN supervised the installation of 7 membrane interface probe borings, 5 soil borings, and 3 temporary well points. Soil and groundwater samples were collected for a chemical oxidation treatability study. SHN will prepare a report of findings once the results of the treatability study are received.

Mark Verhey

Former Rio Dell Texaco Third Quarter 2005 Groundwater Monitoring Report; LOP No. 12691

November 22, 2005

Page 7

If you have any questions regarding the work completed, please call me at 707/441-8855.

Sincerely,

SHN Consulting Engineers & Geologists, Inc.

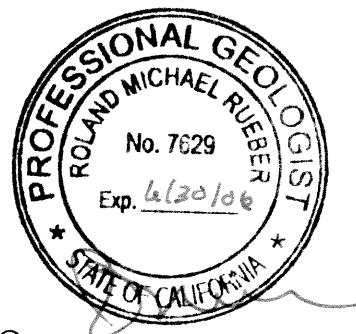
Roland Rueber For FBL

Frans Lowman, P.G.
Project Manager

FBL/RMR:ap:med

- Attachments:
1. Historic Monitoring Data Collected by LACO
 2. Field Notes
 3. Historic Monitoring Data Collected by SHN
 4. Laboratory Analytical Report

copy w/attach: Ms. Dorothy Bianchi



References Cited

Barden, M.J., 2002. Natural Attenuation for Remediation of Contaminated Sites #571. National Groundwater Association Short Course. Westerville, Ohio.

LACO Associates. (November 1998). *UST Closure Report, Rio Dell Texaco*. Eureka: LACO

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Wiedemeier, T.H., 2002. Natural Attenuation for Remediation of Contaminated Sites #571. National Groundwater Association Short Course. Westerville, Ohio.

Wiedemeier, T.H., Wilson, J.T., Campbell, D.H., Miller, R. N., Hansen, J.E., 1999. Technical Protocol for Implementing Intrinsic Remediation with Long-Term Monitoring for Natural Attenuation of Fuel Contamination Dissolved in Groundwater. Air Force Center for Environmental Excellence, Technology Transfer Division, San Antonio Texas.

Attachment 1

Historic Monitoring Data Collected by LACO

TABLE 1: WELL DATA AND GROUNDWATER ANALYTICAL RESULTS
Former Rio Dell Texaco, 100 Wildwood Ave, Rio Dell, Ca
LACO No. 3554.03; LOP No.12691

WELL/ Sample Date	Groundwater Measurements			Analytical Results							
	Well Head Elevation (feet, NAVD88)	Ground water Elevation (feet, NAVD88)	Depth to Water (feet)	TPHg ($\mu\text{g/L}$)	TPHd ($\mu\text{g/L}$)	Benzene ($\mu\text{g/L}$)	Toluene ($\mu\text{g/L}$)	Ethylbenzene ($\mu\text{g/L}$)	Xylenes ($\mu\text{g/L}$)	MTBE ($\mu\text{g/L}$)	Other Analytes ($\mu\text{g/L}$)
MW-1	139.06										
2/24/2000	132.61	6.45	ND<50	—	ND<0.50	ND<0.50	ND<0.50	ND<0.50	1.2	4.3	ND<0.50-50
3/21/2000	132.00	7.06	—	—	—	—	—	—	—	—	—
4/18/2000	131.49	7.57	—	—	—	—	—	—	—	—	—
5/26/2000	131.19	7.87	ND<50	—	ND<0.50	ND<0.50	ND<0.50	ND<0.50	2.5	ND<0.50-50	
6/30/2000	130.52	8.54	—	—	—	—	—	—	—	—	—
7/31/2000	131.27	7.79	—	—	—	—	—	—	—	—	—
8/30/2000	128.45	10.61	ND<50	—	ND<0.50	ND<0.50	ND<0.50	ND<0.50	88	1,2-Dichloroethane = 0.94	
9/22/2000	128.14	10.92	—	—	—	—	—	—	—	—	—
10/26/2000	127.98	11.08	—	—	—	—	—	—	—	—	—
11/24/00	129.81	9.25	ND<50	—	ND<0.50	ND<0.50	ND<0.50	ND<0.50	7.8	ND<0.50-50	
12/12/2000	130.25	8.81	—	—	—	—	—	—	—	—	—
1/12/2001	131.44	7.62	—	—	—	—	—	—	—	—	—
2/22/2001	132.33	6.73	ND<50	—	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50-50	
4/5/2001	131.38	7.68	—	—	—	—	—	—	—	—	—
5/2/2001	131.16	7.90	—	—	—	—	—	—	—	—	—
5/22/2001	130.73	8.33	ND<50	—	ND<0.50	ND<0.50	ND<0.50	ND<0.50	4.1	ND<0.50-50	
6/11/2001	130.08	8.98	—	—	—	—	—	—	—	—	—
7/6/2001	129.87	9.19	—	—	—	—	—	—	—	—	—
9/4/2001	127.97	11.09	ND<50	—	ND<0.50	ND<0.50	ND<0.50	ND<0.50	120	1,2-Dichloroethane = 1.3	
11/29/2001	131.27	7.79	ND<50	—	ND<0.50	ND<0.50	ND<0.50	ND<0.50	0.61	ND<0.50-50	
2/28/2002	131.80	7.26	ND<50	—	ND<0.50	ND<0.50	ND<0.50	ND<0.50	2.6	ND<0.50-50	
5/20/2002	130.77	8.29	ND<50	—	ND<0.50	ND<0.50	ND<0.50	ND<0.50	2.3	ND<0.50-50	
8/8/2002	128.51	10.55	53	—	ND<0.50	ND<0.50	ND<0.50	ND<0.50	100	ND<0.50-50	
			Monitoring well top of casings resurveyed 8/15/02								
12/6/2002	128.48	10.58	66	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	90	TBA=110 1,2-Dichloroethane=1.0 All others ND<1.0	
2/24/2003	131.67	7.39	ND<50	—	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50-50	
5/15/2003	131.33	7.73	ND<50	—	ND<0.50	ND<0.50	ND<0.50	ND<0.50	7.0	ND<0.50-20	
8/11/2003	129.58	9.48	ND<50	—	ND<0.50	ND<0.50	ND<0.50	ND<0.50	1.43	36.0	ND<1.0-20
11/11/2003	129.15	9.91	ND<50	—	ND<0.50	ND<0.50	ND<0.50	ND<0.50	4.4	ND<1.0-20	
2/17/2004	132.19	6.87	—	—	—	—	—	—	—	—	
5/10/2004	131.48	7.58	—	—	—	—	—	—	—	—	
8/17/2004	128.47	10.59	94	—	ND<0.50	ND<0.50	ND<0.50	ND<0.50	87	ND<1.0-10	
MW-2	139.83										
2/24/2000	137.21	2.62	ND<50	—	ND<0.50	ND<0.50	ND<0.50	ND<0.50	92	TAME = 0.66 1,2-Dichloroethane=2.8 All others ND<0.50-50	
3/21/2000	137.28	2.55	—	—	—	—	—	—	—	—	
4/18/2000	137.82	2.01	—	—	—	—	—	—	—	—	
5/26/2000	NA	NA	330	—	ND<0.50	ND<0.50	ND<0.50	ND<0.50	33	ND<0.50 to 100	
6/30/2000	NA	NA	—	—	—	—	—	—	—	—	
7/31/2000	NA	NA	—	—	—	—	—	—	—	—	
8/30/2000	126.18	10.63	ND<50	—	ND<0.50	ND<0.50	ND<0.50	ND<0.50	100	TAME = 0.99 1,2-Dichloroethane=2.5 All others ND<0.50-50	
9/22/2000	inaccessible		—	—	—	—	—	—	—	—	
10/26/2000	inaccessible		—	—	—	—	—	—	—	—	
11/24/00	134.78	5.05	100	—	ND<0.50	ND<0.50	ND<0.50	ND<0.50	37	TAME = 0.55 1,2-Dichloroethane=0.71 All others ND<0.50-50	
12/12/2000	136.02	3.81	—	—	—	—	—	—	—	—	
1/12/2001	136.27	3.56	—	—	—	—	—	—	—	—	
2/22/2001	136.53	3.30	ND<50	—	ND<0.50	ND<0.50	ND<0.50	ND<0.50	44	TAME = 0.58 1,2-Dichloroethane=2.3 All others ND<0.50-50	
4/5/2001	136.50	3.33	—	—	—	—	—	—	—	—	
5/2/2001	136.34	3.49	—	—	—	—	—	—	—	—	
5/22/2001	135.09	4.74	ND<50	—	ND<0.50	ND<0.50	ND<0.50	ND<0.50	65	1,2-Dichloroethane=2.1 All others ND<0.50-50	
6/11/2001	134.38	5.45	—	—	—	—	—	—	—	—	
7/6/2001	134.17	5.66	—	—	—	—	—	—	—	—	
9/4/2001	132.42	7.41	ND<50	—	ND<0.50	ND<0.50	ND<0.50	ND<0.50	58	TAME = 2.2 1,2-Dichloroethane=2.4 All others ND<0.50-50	

TABLE 1: WELL DATA AND GROUNDWATER ANALYSIS
Former Rio Dell Texaco, 100 Wildwood Ave, Rio Dell, Ca
LACO No. 3554.03; LOP No.12691

JUL RESULTS

WELL/ Sample Date	Groundwater Measurements			Analytical Results							
	Well Head Elevation (feet, NAVD88)	Ground water Elevation (feet, NAVD88)	Depth to Water (feet)	TPHg ($\mu\text{g/L}$)	TPHd ($\mu\text{g/L}$)	Benzene ($\mu\text{g/L}$)	Toluene ($\mu\text{g/L}$)	Ethylbenzene ($\mu\text{g/L}$)	Xylenes ($\mu\text{g/L}$)	MTBE ($\mu\text{g/L}$)	Other Analytes ($\mu\text{g/L}$)
MW2 continued											
11/29/2001	136.87	2.96		ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	35	TAME = 1.2 1,1-Dichloroethane=2.8 All others ND<0.50-50
2/28/2002	136.56	3.27		100	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	33	TAME = 1.2 1,1-Dichloroethane=2.2 All others ND<0.50-50
5/20/2002	134.88	4.95		57	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	37	TAME = 2.1 1,1-Dichloroethane=2.1 All others ND<0.50-50
8/8/2002	133.03	6.80		120	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	21	TAME = 1.2 1,1-Dichloroethane=1.2 All others ND<0.50-50
Monitoring well top of casings resurveyed 8/15/02											
12/6/2002	133.04	6.79		59	ND<50	0.62	0.98	0.60	1.95	41	TAME=2.8 1,1-Dichloroethane=3.1 All others ND<1.0-20
2/24/2003	136.49	3.34		ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	26	TAME=1.7 1,1-Dichloroethane=2.8 All others ND<1.0-20
5/15/2003	136.44	3.39		ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	21	TAME=1.2 1,1-Dichloroethane=2.1 All others ND<1.0-20
8/11/2003	133.90	5.93		150	--	ND<0.50	ND<0.50	ND<0.50	0.70	9.5	ND<1.0-20
11/11/2003	134.11	5.72		ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	18	TAME=1.2 1,1-Dichloroethane=1.3 All others ND<1.0-20
2/17/2004	136.35	2.71		--	--	--	--	--	--	--	
5/10/2004	135.88	3.18		--	--	--	--	--	--	--	
8/17/2004	132.28	6.78		120	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	6.9	ND<1.0-10
MW-3											
2/24/2000	139.87	1.60		ND<50	--	ND<0.50	ND<0.50	ND<0.50	1	21	ND<0.50-50
3/21/2000	137.87	2.00		--	--	--	--	--	--	--	
4/18/2000	138.20	1.67		--	--	--	--	--	--	--	
5/26/2000	137.51	2.36		ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	9.8	ND<0.50-50
6/30/2000	136.74	3.13		--	--	--	--	--	--	--	
7/31/2000	135.42	4.45		--	--	--	--	--	--	--	
8/30/2000	134.37	5.50		ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	17	ND<0.50-50
9/22/2000	134.34	5.53		--	--	--	--	--	--	--	
10/26/2000	135.28	4.59		--	--	--	--	--	--	--	
11/24/00	137.27	2.60		ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	17	ND<0.50-50
12/12/2000	137.43	2.44		--	--	--	--	--	--	--	
1/12/2001	138.06	1.81		--	--	--	--	--	--	--	
2/22/2001	137.99	1.88		ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	0.61	ND<0.50-50
4/5/2001	138.00	1.87		--	--	--	--	--	--	--	
5/2/2001	137.76	2.11		--	--	--	--	--	--	--	
5/22/2001	137.01	2.86		ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	4.1	ND<0.50-50
6/11/2001	136.28	3.59		--	--	--	--	--	--	--	
7/6/2001	136.15	3.72		--	--	--	--	--	--	--	
9/4/2001	134.07	5.80		ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	6.4	All ND<0.50-500 Methanol=77
11/29/2001	137.79	1.08		ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	3.8	All others ND<0.50-50
2/28/2002	138.02	1.85		ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	2.2	All ND<0.50-50
5/20/2002	137.62	1.25		ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	1.4	All ND<0.50-50
8/8/2002	134.89	4.98		ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	1.6	All ND<0.50-50
Monitoring well top of casings resurveyed 8/15/02											
12/6/2002	135.38	4.49		ND<50	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	4.2	All ND<0.50-20
2/24/2003	138.03	1.84		ND<50	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	1.0	All ND<0.50-20
5/15/2003	138.22	1.65		ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	All ND<0.50-20
8/11/2003	135.69	4.18		ND<50	--	ND<0.50	ND<0.50	ND<0.50	0.75	1.5	ND<1.0-20
11/11/2003	136.76	3.11		ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	1.5	ND<1.0-20
2/17/2004	137.89	1.17		--	--	--	--	--	--	--	
5/10/2004	137.58	1.48		--	--	--	--	--	--	--	
8/17/2004	134.07	4.99		ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<1.0-10
MW-4											
2/24/2000	139.00	7.88		ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	350	TAME = 2.8 1,1-Dichloroethane=28 All others ND<0.50-500
3/21/2000	133.16	5.84		--	--	--	--	--	--	--	
4/18/2000	133.40	5.60		--	--	--	--	--	--	--	

TABLE 1: WELL DATA AND GROUNDWATER ANALYTICAL RESULTS
Former Rio Dell Texaco, 100 Wildwood Ave, Rio Dell, CA
LACo No. 3554.03; LOP No.12691

WELL/ Sample Date	Groundwater Measurements			Analytical Results							
	Well Head Elevation (feet, NAVD88)	Ground water Elevation (feet, NAVD88)	Depth to Water (feet)	TPHg ($\mu\text{g}/\text{L}$)	TPHd ($\mu\text{g}/\text{L}$)	Benzene ($\mu\text{g}/\text{L}$)	Toluene ($\mu\text{g}/\text{L}$)	Ethylbenzene ($\mu\text{g}/\text{L}$)	Xylenes ($\mu\text{g}/\text{L}$)	MTBE ($\mu\text{g}/\text{L}$)	Other Analytes ($\mu\text{g}/\text{L}$)
MW-4 cont'd											
5/26/2000	133.30	5.70		1,000	—	ND<2.0	ND<2.0	6	ND<2.0	230	TAME = 2.5 TBA = 44 All others ND<2.0 to 1000
6/30/2000	132.67	6.33		—	—	—	—	—	—	—	—
7/31/2000	132.38	6.62		—	—	—	—	—	—	—	—
8/30/2000	129.45	6.52		ND<50	—	ND<0.50	ND<0.50	ND<0.50	ND<0.50	220	TAME = 3.9 1,2-Dichloroethane=20 TBA = 5.6
9/22/2000	130.55	8.45		—	—	—	—	—	—	—	—
10/26/2000	130.38	8.62		—	—	—	—	—	—	—	—
11/24/00	131.82	7.18		ND<50	—	ND<0.50	ND<0.50	ND<0.50	ND<0.50	620	TAME = 6.1 1,2-Dichloroethane=16 TBA = 9.6
12/12/2000	132.31	6.69		—	—	—	—	—	—	—	—
1/12/2001	132.83	6.17		—	—	—	—	—	—	—	—
2/22/2001	133.44	5.56		280	—	ND<1.0	ND<1.0	ND<1.0	ND<1.0	350	TAME = 4.1 1,2-Dichloroethane=4.5 TBA = 47
4/5/2001	133.63	5.37		—	—	—	—	—	—	—	—
5/2/2001	133.60	5.40		—	—	—	—	—	—	—	—
5/22/2001	133.35	5.65		210	—	ND<1.0	ND<1.0	ND<1.0	ND<1.0	380	TAME = 4.5 1,2-Dichloroethane=6.2 TBA = 34
6/11/2001	132.14	6.86		—	—	—	—	—	—	—	—
7/6/2001	132.01	6.99		—	—	—	—	—	—	—	—
9/4/2001	130.39	8.61		ND<50	—	ND<0.50	ND<0.50	ND<0.50	ND<0.50	350	TAME = 5.4 1,2-Dichloroethane=12 All others ND<0.50-500 TAME = 1.5 1,2-Dichloroethane=3.7 Methanol 56
11/29/2001	132.58	6.42		ND<50	—	ND<0.50	ND<0.50	ND<0.50	ND<0.50	220	All others ND<0.50-50 TAME = 3.3 1,2-Dichloroethane=2.3 TBA = 38 All others ND<0.50-50 TAME = 4.6
2/28/2002	133.39	5.61		780	—	ND<0.50	ND<0.50	ND<0.50	ND<0.50	300	1,2-Dichloroethane=6.8 TBA = 21 All others ND<0.50-50 TAME = 4.8 1,2-Dichloroethane=6.4 TBA = 12
5/20/2002	133.35	5.65		450	—	ND<0.50	ND<0.50	ND<0.50	ND<0.50	450	All others ND<0.50-50 TAME = 23 1,2-Dichloroethane=7.5 TBA = 32
8/8/2002	130.53	8.47		270	—	ND<0.50	ND<0.50	ND<0.50	ND<0.50	410	All others ND<0.50-50 Monitoring well top of casings resurveyed 8/15/02
12/6/2002	129.94	9.06		360	ND<50	ND<0.50	ND<0.50	ND<0.50	0.71	500	TBA=29 TAME=5.9 1,2-Dichloroethane=14 All others ND<1.0 TBA=29
2/24/2003	133.79	5.21		270	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	360	TAME=1.6 1,2-Dichloroethane=7.5 All others ND<1.0 TBA=32
5/15/2003	133.09	5.91		200	—	ND<0.50	ND<0.50	ND<0.50	ND<0.50	130	TAME=1.2 1,2-Dichloroethane=1.2 All others ND<1.0 TBA=23
8/11/2003	131.66	7.34		150	—	ND<0.50	ND<0.50	ND<0.50	0.81	190	TAME=1.6 1,2-Dichloroethane=7.3 All others ND<1.0 TBA=32
11/11/2003	130.89	8.11		170	—	ND<0.50	ND<0.50	ND<0.50	ND<0.50	250	TAME=1.4 1,2-Dichloroethane=5.8 All others ND<1.0-20
2/17/2004	132.03	6.97		360	—	ND<0.50	ND<0.50	ND<0.50	ND<0.50	440	TAME=4.2 All others ND<1.0-10
5/10/2004	133.19	5.81		250	—	1.4	ND<0.50	ND<0.50	4.3	160	TBA=47 TAME=1.5 All others ND<1.0
8/17/2004	130.57	8.43		470	—	ND<0.50	ND<0.50	ND<0.50	ND<0.50	430	TAME=4.4 All others ND<1.0-50

NOTES:

Wells re-surveyed 8/15/02 by R. Smith, LS, using Caltrans HPGN monument "D CA 01 NC" south of Rio Dell @ Jordan Road/Hwy 254 (Pepperwood) off-ramp

TABLE 2: HISTORIC GRADIENT DATA
 Former Rio Dell Texaco, 100 Wildwood Ave., Rio Dell, CA
 LACO No. 3554.03; LOP No. 12691

Date	North		South	
	Gradient	Slope	Gradient	Slope
6/30/2000	S68W	6.20%	---	---
7/31/2000	S78W	4.70%	---	---
8/30/2000	S33W	8.20%	---	---
9/22/2000	S52E	0.60%	---	---
10/26/2000	S40E	0.70%	---	---
11/24/2000	S34E	8.20%	S61E	6.40%
12/12/2000	S27E	8.30%	S45E	10.50%
1/12/2001	S33E	7.80%	S44E	8.80%
2/22/2001	S32E	6.70%	S40E	7.80%
4/5/2001	S30E	7.10%	S47E	8.40%
5/2/2001	S30E	6.80%	S48E	8.20%
5/22/2001	S41E	5.80%	S52E	6.20%
6/11/2001	S42E	6.20%	S46E	7.10%
7/6/2001	S34E	6.20%	S52E	7.00%
9/4/2001	S34E	5.50%	S54E	7.30%
11/29/2001	S26E	8.80%	---	---
2/28/2002	S35E	3.90%	---	---
5/20/2002	S63E	6.40%	---	---
8/8/2002	S35E	6.50%	---	---
12/6/2002	S35E	7.30%	---	---
2/24/2003	S35E	6.40%	---	---
5/15/2003	S35E	7.20%	---	---
8/11/2003	S30E	6.30%	---	---
11/11/2003	S31E	8.94%	---	---

Attachment 2
Field Notes



CONSULTING ENGINEERS & GEOLOGISTS, INC.

480 Hemsted Drive • Redding, CA 96002 • Tel: 530.221.5424 • FAX: 530.221.0135 • E-mail: shninfo@shn-redding.com
812 W. Wabash • Eureka, CA 95501 • Tel: 707.441.8855 • FAX: 707.441.8877 • E-mail: shninfo@shn-enr.com

DAILY FIELD REPORT

JOB NO	004323
Page	1 of 8

PROJECT NAME Rio Dell Texaco	CLIENT/OWNER Dorothy Bianchi	DAILY FIELD REPORT SEQUENCE NO 1
GENERAL LOCATION OF WORK Rio Dell, CA	OWNER/CLIENT REPRESENTATIVE Dorothy Bianchi	DATE 8-23-05 DAY OF WEEK Tuesday
TYPE OF WORK Quarterly Sampling	WEATHER Clear	PROJECT ENGINEER/ SUPERVISOR Roland Rueber
SOURCE & DESCRIPTION OF FILL MATERIAL	KEY PERSONS CONTACTED	TECHNICIAN David R. Paine

DESCRIBE EQUIPMENT USED FOR HAULING, SPREADING, WATERING, CONDITIONING, & COMPACTING

- 0839 Arrived at site removed lids and caps on all 4 wells.
0905 I started taking water levels decommissioning the sounder after each well by scrubbing it with liquinox then rinsing it with DI water.
0923 I started taking DO reading.
1002 I started purging mw-3 with a disposable bailer, purge water was caught in a graduated 5 gal. bucket.
1027 I started purging mw-2 with a disposable bailer, purge water was caught in a graduated 5 gal. bucket.
1055 I sampled mw-3, secured well with cap and lid.
1103 I started purging mw-1 with a disposable bailer, purge water was caught in a graduated 3 gal. bucket, well went dry.
1130 I sampled mw-2, secured well with cap and lid.
1141 I started purging mw-4 with a disposable bailer, purge water was caught in a graduated 3 gal. bucket, well went dry.
1215 I sampled mw-1, secured well with cap and lid.
1230 I sampled mw-4, secured well with cap and lid.
1244 OFF SITE

Note: All decom water and purge water was caught in 5 gal. buckets with lids, then transported to SHN's 1,000 gal. PWST located at 812 W. Wabash Avenue Eureka, CA 20 gallons total.

COPY GIVEN TO:

REPORTED BY:

David R. Paine



CONSULTING ENGINEERS & GEOLOGISTS, INC.

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Groundwater Elevations

Job No.: 004323

Name: David R. Payne

Client: Dorothy Bianchi

Date: 8-23-05

Location: Former Rio Dell Texaco

Weather:

EQUIPMENT CALIBRATION SHEET

Name:	<u>David R. Payne</u>			
Project Name:	<u>Rio Dell Texas</u>			
Reference No.:	<u>004323</u>			
Date:	<u>8-23-05</u>			
Equipment:	<input checked="" type="checkbox"/> pH & EC	<input type="checkbox"/> PID	<input type="checkbox"/> GTCO ₂	<input type="checkbox"/> GTLEL
	<input type="checkbox"/> Turbidity	<input checked="" type="checkbox"/> Other	<u>Dissolved Oxygen Meter YS195</u>	

Description of Calibration Procedure and Results:

pH & EC meter is calibrated using a 2 buffer method with 7.01 and 4.01, the EC (conductivity) is set at 1413 uS.

DO meter is self calibrating with the Altimeter set at 1.



Water Sampling Data Sheet

Project Name:	Rio Dell Texaco	Date/Time:	8-23-05
Project No.:	004323	Sampler Name:	David R. Painz
Location:	Rio Dell, CA	Sample Type:	Ground water
Well #:	MW-1	Weather	Clear
Hydrocarbon Thickness/Depth (feet):	NA	Key Needed:	YES Dolphin

$$\begin{array}{l} \text{Total Well Depth} \\ \text{(feet)} \end{array} - \begin{array}{l} \text{Initial Depth to} \\ \text{Water (feet)} \end{array} = \begin{array}{l} \text{Height of Water} \\ \text{Column (feet)} \end{array} \times \begin{array}{l} 0.163 \text{ gal/ft (2-inch well) /} \\ 0.653 \text{ gal/ft (4-inch well)} \end{array} = \begin{array}{l} 1 \text{ Casing Volume} \\ (\text{gal}) \end{array}$$

15.07	-	9.36	=	5.71	×	0.163	=	0.93
-------	---	------	---	------	---	-------	---	------

Time	DO (ppm)	CO ₂ (ppm)	ORP (mV)	EC (uS/cm)	Temp (°F)	pH	Water Removed (gal)	Comments
0942	2.04						0 gal.	
1103		60	199				0.25 gal.	
1111				361	65.1°	6.09	1 gal.	
1115	No Flow			367	64.7°	6.13	2 gal.	
1119	Thru cell			401	64.1°	6.31	3 gal. Dry	
1137				403	64.2°	6.28	4.25 gal. Dry	
1215	Sample Time							

Purge Method: Hand Bail

Total Volume Removed: 4.25 (gal)

Laboratory Information

Sample ID	# & Type of Containers	Preservative / Type	Laboratory	Analyses
MW-1	3 - 40ml UOM's	YES HCl	NCL	8260 list 1
MW-1	250 ml plastic	None	NCL	NO ₃ , SO ₄ , Alk
MW-1	250 ml plastic	None	NCL	Diss. Fe & Mn

Well Condition: Good

Remarks:

Recharged to 10.41 at sampling Time



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Water Sampling Data Sheet

Project Name:	Rio Dell Texaco	Date/Time:	8-23-05
Project No.:	004323	Sampler Name:	David R. Paine
Location:	Rio Dell, CA	Sample Type:	Ground water
Well #:	MW-2	Weather	Clear
Hydrocarbon Thickness/Depth (feet): NA		Key Needed:	YES Dolphin

$$\begin{array}{l} \text{Total Well Depth} \\ \text{(feet)} \end{array} - \begin{array}{l} \text{Initial Depth to} \\ \text{Water (feet)} \end{array} = \begin{array}{l} \text{Height of Water} \\ \text{Column (feet)} \end{array} \times \begin{array}{l} 0.163 \text{ gal/ft (2-inch well) /} \\ 0.653 \text{ gal/ft (4-inch well)} \end{array} = \begin{array}{l} 1 \text{ Casing Volume} \\ (\text{gal}) \end{array}$$

15.00	-	5.77	=	9.23	×	0.163	=	1.50
-------	---	------	---	------	---	-------	---	------

Time	DO (ppm)	CO ₂ (ppm)	ORP (mV)	EC (uS/cm)	Temp (°F)	pH	Water Removed (gal)	Comments
0935 (0.75)							0 gal,	
1027	50	183					0.25 gal,	
1035	↓			498	64.7°	6.48	1.50 gal,	
1039	No Flow			531	63.9°	6.53	3 gal,	
1045	then cell			521	63.1°	6.53	4.50 gal,	
1130	Sample Time							

Purge Method: Hand Bail

Total Volume Removed: 4.50 (gal)

Laboratory Information

Sample ID	# & Type of Containers	Preservative / Type	Laboratory	Analyses
MW-2	3 - 40ml vials	YES HCl	NCL	8260 1st 1
MW-2	250 ml plastic	None	NCL	NO ₃ , SO ₄ , Alk
MW-2	250 ml plastic	None	NCL	Diss. Fe + Mn

Well Condition: Good

Remarks:

Recharged to 10.17 at sampling time



Water Sampling Data Sheet

Project Name:	Rio Dell Texaco	Date/Time:	8.23.05
Project No.:	004323	Sampler Name:	David R. Paine
Location:	Rio Dell, CA	Sample Type:	Ground water
Well #:	MW-3	Weather:	Clear
Hydrocarbon Thickness/Depth (feet): NA		Key Needed:	YES Dolphin

$$\begin{array}{l} \text{Total Well Depth} \\ \text{(feet)} \end{array} - \begin{array}{l} \text{Initial Depth to} \\ \text{Water (feet)} \end{array} = \begin{array}{l} \text{Height of Water} \\ \text{Column (feet)} \end{array} \times \begin{array}{l} 0.163 \text{ gal/ft (2-inch well) /} \\ 0.653 \text{ gal/ft (4-inch well)} \end{array} = \begin{array}{l} 1 \text{ Casing Volume} \\ (\text{gal}) \end{array}$$

14.96	-	4.71	=	10.25	×	0.163	=	1.67
-------	---	------	---	-------	---	-------	---	------

Time	DO (ppm)	CO ₂ (ppm)	ORP (mV)	EC (uS/cm)	Temp (°F)	pH	Water Removed (gal)	Comments
0928 (0.88)							0 gal.	
1002		35	144				0.25 gal.	
1012	↓			271	71.6°	6.26	1.25 gal.	
1016	No Flow			268	69.7°	6.29	3.50 gal.	
021	thru cell			270	68.1°	6.31	5 gal.	
1055	Sample Time							

Purge Method: Hand Bail

Total Volume Removed: 5.00 (gal)

Laboratory Information

Sample ID	# & Type of Containers	Preservative / Type	Laboratory	Analyses
MW-3	3 - 40ml vials	YES HCl	NCL	8260 1st 1
MW-3	250 ml plastic	None	NCL	NO ₃ , SO ₄ , Alk
MW-3	250 ml plastic	None	NCL	Diss. Fe, P Mn

Well Condition: Good

Remarks:

Recharged to 8.51 at sampling time



Water Sampling Data Sheet

Project Name:	Rio Dell Texaco	Date/Time:	8-23-05
Project No.:	004323	Sampler Name:	David R. Paine
Location:	Rio Dell, CA	Sample Type:	Ground water
Well #:	MW-4	Weather:	Clear
Hydrocarbon Thickness/Depth (feet):	NA	Key Needed:	YES Dolphin

Total Well Depth (feet)	Initial Depth to Water (feet)	=	Height of Water Column (feet)	\times	0.163 gal/ft (2-inch well) / 0.653 gal/ft (4-inch well)	=	1 Casing Volume (gal)
14.92	9.66	=	5.26	\times	0.163	=	0.86

Time	DO (ppm)	CO ₂ (ppm)	ORP (mV)	EC (uS/cm)	Temp (°F)	pH	Water Removed (gal)	Comments
0949	0.76						0 gal	
1141		130	188				0.25 gal,	
1151				827	68.1°	6.40	1 gal,	
1155	No Flow			829	68°	6.42	2 gal,	
200	Through cell			853	67.2°	6.48	2.25 gal. Dey	
1230	Sample Time							

Purge Method: Hand Bail

Total Volume Removed: 2.75 (gal)

Laboratory Information

Sample ID	# & Type of Containers	Preservative / Type	Laboratory	Analyses
MW-4	3 - 40ml vials	YES HCl	NCL	8260 1st 1
MW-4	250 ml plastic	None	NCL	NO ₃ , SO ₄ , Alk
MW-4	250 ml plastic	None	NCL	Diss. Fe & Mn

Well Condition: Good

Remarks:

Recharged to 12.87 at sampling time

Client Name: **RIO DELL TEXACO**

The water from your site: **100 WILDWOOD AVENUE
RIO DELL, CA LOP #12691**

SHN ref #: **004323** Collected On: **5/13/05**

Has been tested and certified as acceptable to be discharged into the City of Eureka municipal sewer system.

Amount Discharged:

25 GALLONS

Date Discharged:

5/23/05

Certified by: **DAVID R. PINE**

SHN CONSULTING ENGINEERS & GEOLOGISTS, INC.
City of Eureka Wastewater Discharge Permit #65

Client Name:

RIO DELL TEXACO

The water from your site:

**100 WILDWOOD AVENUE
RIO DELL, CA LOP # 12691**

SHN ref #

004323

Collected On:

8/23/05

Has been tested and certified as acceptable to be discharged into the City of Eureka municipal sewer system.

Amount Discharged:

20 GALLONS

Date Discharged:

9/9/05

Certified by:

DAVID R. PAINÉ

SHN CONSULTING ENGINEERS & GEOLOGISTS, INC.

City of Eureka Wastewater Discharge Permit #65

Attachment 3

Historic Monitoring Data Collected by SHN

Table 3-1
Historic Groundwater Elevations
Former Rio Dell Texaco, Rio Dell, California

Sample Location	Date	Top of Casing Elevation (feet) ¹	Depth to Water (feet) ²	Groundwater Elevation (feet) ¹
MW-1	02/11/05	139.06	7.98	131.08
	05/13/05		7.68	131.38
	08/23/05		9.36	129.70
MW-2	02/11/05	139.83	4.84	134.99
	05/13/05		4.43	135.40
	08/23/05		5.77	134.06
MW-3	02/11/05	139.87	2.50	137.37
	05/13/05		2.11	137.76
	08/23/05		4.71	135.16
MW-4	02/11/05	139.00	8.03	130.97
	05/13/05		8.88	130.12
	08/23/05		9.66	129.34

1. Referenced to NAVD88 (North American Vertical Datum 1988)

2. Below top of casing

Table 3-2
Historic Groundwater Analytical Results
Former Rio Dell Texaco, Rio Dell, California
¹(in ug/L)

Sample Location	Date	TPHG ²	B ²	T ²	E ²	X ²	MTBE ²	TBA ²	DIPE ²	ETBE ²	TAME ²
MW-1	02/11/05	57 ³	<0.50 ⁴	<0.50	<0.50	<0.50	46	<10	<1.0	<1.0	<1.0
	05/13/05	<50	<0.50	<0.50	<0.50	<0.50	67	<20	<1.0	<1.0	<1.0
	08/23/05	86 ³	<0.50	<0.50	<0.50	<0.50	96	<10	<1.0	<1.0	<1.0
MW-2	02/11/05	<50	<0.50	<0.50	<0.50	<0.50	17	<10	<1.0	<1.0	1.2
	05/13/05	<50	<0.50	<0.50	<0.50	<0.50	18	<10	<1.0	<1.0	2.0
	08/23/05	66 ³	<0.50	<0.50	<0.50	<0.50	60	<10	<1.0	<1.0	2.5
MW-3	02/11/05	<50	<0.50	<0.50	<0.50	<0.50	<1.0	<10	<1.0	<1.0	<1.0
	05/13/05	<50	<0.50	<0.50	<0.50	<0.50	<1.0	<10	<1.0	<1.0	<1.0
	08/23/05	<50	<0.50	<0.50	<0.50	<0.50	<1.0	<10	<1.0	<1.0	<1.0
MW-4	02/11/05	500 ³	<0.50	<0.50	<0.50	<0.50	470	30	<1.0	<1.0	4.4
	05/13/05	570 ³	<0.50	<0.50	<0.50	<0.50	530	45	<1.0	<1.0	6.2
	08/23/05	490 ³	<0.50	<0.50	<0.50	<0.50	520	<10	<1.0	<1.0	5.6

1. ug/L: micrograms per Liter

2. Total Petroleum Hydrocarbons as Gasoline (TPHG), Benzene (B), Toluene (T), Ethylbenzene (E), total Xylenes (X), Methyl-Tertiary-Butyl Ether (MTBE), Tertiary-Butyl Alcohol (TBA), Di-isopropyl Ether (DIPE), Ethyl Tertiary-Butyl Ether (ETBE), and Tertiary-Amyl Methyl Ether (TAME), analyzed in general accordance with United States Environmental Protection Agency (EPA) Method No. 8260B.

3. The gasoline values are primarily from the reported gasoline additives.

4. <: Denotes a value that is "less than" the method detection limit.

Table 3-3
Historic DO, DCO₂, and ORP Measurement Results

Former Rio Dell Texaco, Rio Dell, California

Sample Location	Date	DO ¹ (ppm) ²	DCO ₂ ³ (ppm)	ORP ⁴ (mV) ⁵
MW-1	02/11/05	0.75	50	136
	05/13/05	1.44	60	241
	08/23/05	2.04	60	199
MW-2	02/11/05	0.67	60	155
	05/13/05	0.60	70	226
	08/23/05	0.75	50	183
MW-3	02/11/05	0.76	35	167
	05/13/05	1.16	40	207
	08/23/05	0.88	35	144
MW-4	02/11/05	0.85	160	98
	05/13/05	0.56	180	229
	08/23/05	0.76	130	188

1. DO: Dissolved Oxygen, field measured using portable instrumentation

2. ppm: parts per million

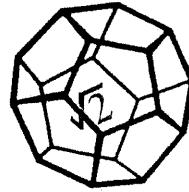
3. DCO₂: Dissolved Carbon Dioxide, field measured using a field test kit

4. ORP: Oxidation-Reduction Potential measured using portable instrumentation

5. mV: millivolts

Attachment 4

Laboratory Analytical Report



**NORTH COAST
LABORATORIES LTD.**

September 02, 2005

Pvt. cust. paying on pickup

,

Attn: Dorothy Bianchi

RE: 004323, Rio Dell Texaco

Order No.: 0508642

Invoice No.: 52544

PO No.:

ELAP No. 1247-Expires July 2006

SAMPLE IDENTIFICATION

Fraction	Client Sample Description
01A	MW-3
01D	MW-3
01E	MW-3 (Dissolved)
02A	MW-2
02D	MW-2
02E	MW-2 (Dissolved)
03A	MW-1
03D	MW-1
03E	MW-1 (Dissolved)
04A	MW-4
04D	MW-4
04E	MW-4 (Dissolved)

ND = Not Detected at the Reporting Limit

Limit = Reporting Limit

All solid results are expressed on a wet-weight basis unless otherwise noted.

REPORT CERTIFIED BY

Laboratory Supervisor(s)

QA Unit

Jesse G. Chaney, Jr.
Laboratory Director

North Coast Laboratories, Ltd.**Date: 02-Sep-05**

CLIENT: Pvt. cust. paying on pickup
Project: 004323, Rio Dell Texaco
Lab Order: 0508642

CASE NARRATIVE**Gasoline Components/Additives:**

The gasoline values for samples MW-2, MW-1 and MW-4 are primarily from the reported gasoline additives.

Date: 02-Sep-05
WorkOrder: 0508642

ANALYTICAL REPORT

Client Sample ID: MW-3
Lab ID: 0508642-01A

Received: 8/23/05 Collected: 8/23/05 10:55

Test Name: Gasoline Components/Additives

Reference: LUFT/EPA 8260B Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Methyl tert-butyl ether (MTBE)	ND	1.0	µg/L	1.0		8/30/05
Tert-butyl alcohol (TBA)	ND	10	µg/L	1.0		8/30/05
Di-isopropyl ether (DIPE)	ND	1.0	µg/L	1.0		8/30/05
Ethyl tert-butyl ether (ETBE)	ND	1.0	µg/L	1.0		8/30/05
Benzene	ND	0.50	µg/L	1.0		8/30/05
Tert-amyl methyl ether (TAME)	ND	1.0	µg/L	1.0		8/30/05
Toluene	ND	0.50	µg/L	1.0		8/30/05
Ethylbenzene	ND	0.50	µg/L	1.0		8/30/05
m,p-Xylene	ND	0.50	µg/L	1.0		8/30/05
o-Xylene	ND	0.50	µg/L	1.0		8/30/05
Surrogate: 1,4-Dichlorobenzene-d4	104	80.8-139	% Rec	1.0		8/30/05

Test Name: TPH as Gasoline

Reference: LUFT/EPA 8260B Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gasoline	ND	50	µg/L	1.0		8/30/05

Client Sample ID: MW-3

Received: 8/23/05

Collected: 8/23/05 10:55

Lab ID: 0508642-01D

Test Name: Alkalinity

Reference: Std. Meth. 19th Ed. 2320 B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Alkalinity	97	1.0	mg/L CaCO ₃	1.0		9/2/05

Test Name: Chloride, sulfate, fluoride, bromide

Reference: EPA 300.0

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Sulfate	24	0.50	mg/L	1.0		8/23/05

Test Name: Nitrate/Nitrite

Reference: EPA 300.0

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Nitrate (as Nitrogen)	0.97	0.10	mg/L	1.0		8/23/05

Date: 02-Sep-05
WorkOrder: 0508642

ANALYTICAL REPORT

Client Sample ID: MW-3 (Dissolved)
Lab ID: 0508642-01E

Received: 8/23/05

Collected: 8/23/05 10:55

Test Name: ICAP Metals with Acid Digestion

Reference: EPA 200.7

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Iron	ND	100	µg/L	1.0	8/23/05	8/26/05
Manganese	51	2.0	µg/L	1.0	8/23/05	8/26/05

Client Sample ID: MW-2
Lab ID: 0508642-02A

Received: 8/23/05

Collected: 8/23/05 11:30

Test Name: Gasoline Components/Additives

Reference: LUFT/EPA 8260B Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Methyl tert-butyl ether (MTBE)	60	1.0	µg/L	1.0		8/30/05
Tert-butyl alcohol (TBA)	ND	10	µg/L	1.0		8/30/05
Di-isopropyl ether (DIPE)	ND	1.0	µg/L	1.0		8/30/05
Ethyl tert-butyl ether (ETBE)	ND	1.0	µg/L	1.0		8/30/05
Benzene	ND	0.50	µg/L	1.0		8/30/05
Tert-aryl methyl ether (TAME)	2.5	1.0	µg/L	1.0		8/30/05
Toluene	ND	0.50	µg/L	1.0		8/30/05
Ethylbenzene	ND	0.50	µg/L	1.0		8/30/05
m,p-Xylene	ND	0.50	µg/L	1.0		8/30/05
o-Xylene	ND	0.50	µg/L	1.0		8/30/05
Surrogate: 1,4-Dichlorobenzene-d4	104	80.8-139	% Rec	1.0		8/30/05

Test Name: TPH as Gasoline

Reference: LUFT/EPA 8260B Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gasoline	66	50	µg/L	1.0		8/30/05

Client Sample ID: MW-2

Received: 8/23/05

Collected: 8/23/05 11:30

Lab ID: 0508642-02D

Test Name: Alkalinity

Reference: Std. Meth. 19th Ed. 2320 B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Alkalinity	250	1.0	mg/L CaCO ₃	1.0		9/2/05

Test Name: Chloride, sulfate, fluoride, bromide

Reference: EPA 300.0

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Sulfate	34	0.50	mg/L	1.0		8/23/05

Test Name: Nitrate/Nitrite

Reference: EPA 300.0

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Nitrate (as Nitrogen)	0.15	0.10	mg/L	1.0		8/23/05

Page 2 of 5

Date: 02-Sep-05
WorkOrder: 0508642

ANALYTICAL REPORT

Client Sample ID: MW-2 (Dissolved)

Received: 8/23/05

Collected: 8/23/05 11:30

Lab ID: 0508642-02E

Test Name: ICAP Metals with Acid Digestion

Reference: EPA 200.7

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Iron	ND	100	µg/L	1.0	8/23/05	8/26/05
Manganese	1,700	2.0	µg/L	1.0	8/23/05	8/26/05

Client Sample ID: MW-1

Received: 8/23/05

Collected: 8/23/05 12:15

Lab ID: 0508642-03A

Test Name: Gasoline Components/Additives

Reference: LUFT/EPA 8260B Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Methyl tert-butyl ether (MTBE)	96	1.0	µg/L	1.0		8/30/05
Tert-butyl alcohol (TBA)	ND	10	µg/L	1.0		8/30/05
Di-isopropyl ether (DIPE)	ND	1.0	µg/L	1.0		8/30/05
Ethyl tert-butyl ether (ETBE)	ND	1.0	µg/L	1.0		8/30/05
Benzene	ND	0.50	µg/L	1.0		8/30/05
Tert-amyl methyl ether (TAME)	ND	1.0	µg/L	1.0		8/30/05
Toluene	ND	0.50	µg/L	1.0		8/30/05
Ethylbenzene	ND	0.50	µg/L	1.0		8/30/05
m,p-Xylene	ND	0.50	µg/L	1.0		8/30/05
o-Xylene	ND	0.50	µg/L	1.0		8/30/05
Surrogate: 1,4-Dichlorobenzene-d4	104	80.8-139	% Rec	1.0		8/30/05

Test Name: TPH as Gasoline

Reference: LUFT/EPA 8260B Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gasoline	86	50	µg/L	1.0		8/30/05

Client Sample ID: MW-1

Received: 8/23/05

Collected: 8/23/05 12:15

Lab ID: 0508642-03D

Test Name: Alkalinity

Reference: Std. Meth. 19th Ed. 2320 B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Alkalinity	170	1.0	mg/L CaCO ₃	1.0		9/2/05

Test Name: Chloride, sulfate, fluoride, bromide

Reference: EPA 300.0

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Sulfate	18	0.50	mg/L	1.0		8/23/05

Date: 02-Sep-05

WorkOrder: 0508642

Test Name: Nitrate/Nitrite

ANALYTICAL REPORT

Reference: EPA 300.0

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Nitrate (as Nitrogen)	3.0	0.10	mg/L	1.0		8/23/05

Client Sample ID: MW-1 (Dissolved)

Received: 8/23/05

Collected: 8/23/05 12:15

Lab ID: 0508642-03E

Test Name: ICAP Metals with Acid Digestion

Reference: EPA 200.7

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Iron	150	100	µg/L	1.0	8/23/05	8/26/05
Manganese	24	2.0	µg/L	1.0	8/23/05	8/26/05

Client Sample ID: MW-4

Received: 8/23/05

Collected: 8/23/05 12:30

Lab ID: 0508642-04A

Test Name: Gasoline Components/Additives

Reference: LUFT/EPA 8260B Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Methyl tert-butyl ether (MTBE)	520	50	µg/L	50		8/30/05
Tert-butyl alcohol (TBA)	ND	10	µg/L	1.0		8/30/05
Di-isopropyl ether (DIPE)	ND	1.0	µg/L	1.0		8/30/05
Ethyl tert-butyl ether (ETBE)	ND	1.0	µg/L	1.0		8/30/05
Benzene	ND	0.50	µg/L	1.0		8/30/05
Tert-amyl methyl ether (TAME)	5.6	1.0	µg/L	1.0		8/30/05
Toluene	ND	0.50	µg/L	1.0		8/30/05
Ethylbenzene	ND	0.50	µg/L	1.0		8/30/05
m,p-Xylene	ND	0.50	µg/L	1.0		8/30/05
o-Xylene	ND	0.50	µg/L	1.0		8/30/05
Surrogate: 1,4-Dichlorobenzene-d4	105	80.8-139	% Rec	1.0		8/30/05

Test Name: TPH as Gasoline

Reference: LUFT/EPA 8260B Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gasoline	490	50	µg/L	1.0		8/30/05

Client Sample ID: MW-4

Received: 8/23/05

Collected: 8/23/05 12:30

Lab ID: 0508642-04D

Test Name: Alkalinity

Reference: Std. Meth. 19th Ed. 2320 B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Alkalinity	460	1.0	mg/L CaCO ₃	1.0		9/2/05

Test Name: Chloride, sulfate, fluoride, bromide

Reference: EPA 300.0

Parameter	Result	Limit	Units	DF	Extracted	Analyzed

Page 4 of 5

Date: 02-Sep-05
WorkOrder: 0508642

ANALYTICAL REPORT

Sulfate 7.5 0.50 mg/L 1.0 8/23/05

Test Name: Nitrate/Nitrite

Reference: EPA 300.0

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Nitrate (as Nitrogen)	ND	0.10	mg/L	1.0		8/23/05

Client Sample ID: MW-4 (Dissolved)

Received: 8/23/05

Collected: 8/23/05 12:30

Lab ID: 0508642-04E

Test Name: ICP Metals with Acid Digestion

Reference: EPA 200.7

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Iron	810	100	µg/L	1.0	8/23/05	8/26/05
Manganese	1,800	2.0	µg/L	1.0	8/23/05	8/26/05

Page 5 of 5

North Coast Laboratories, Ltd.

Date: 02-Sep-05

QC SUMMARY REPORT

Method Blank

Client ID:	Sample ID:	Batch ID:	Test Code:	Units:	Analysis Date:	Prep Date					
Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	ND	1.0									
Tert-butyl alcohol (TBA)	ND	10									
Di-isopropyl ether (DIPE)	ND	1.0									
Ethyl tert-butyl ether (ETBE)	ND	1.0									
Benzene	ND	0.50									
Tert-aryl methyl ether (TAME)	ND	1.0									
Toluene	0.07874	0.50									J
Ethylbenzene	0.1129	0.50									J
m,p-Xylene	0.1840	0.50									J
o-Xylene	ND	0.50									
1,4-Dichlorobenzene-d4	1.03	0.10	1.00	0	103%	81	139	0			
Sample ID MB 082905	Batch ID: R36659	Test Code: GASW-MS	Units: µg/L		Analysis Date: 8/29/05 8:48:00 AM	Prep Date					
Client ID:	Run ID:	ORGCMS3_050329A			SeqNo:	527611					
Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Gasoline	16.91	50									J
Sample ID MBLK 082305	Batch ID: R36565	Test Code: IClONW	Units: mg/L		Analysis Date: 8/23/05 1:10:37 PM	Prep Date					
Client ID:	Run ID:	INIC2_050823B			SeqNo:	525220					
Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Pvt. cust. paying on pickup
Work Order: 0508642
Project: 004323, Rio Dell Texaco

QC SUMMARY REPORT

Method Blank

Sample ID	MBLK 0822305	Batch ID:	R36561	Test Code:	ICNOW	Units:	mg/L	Analysis Date	8/23/05 1:10:37 PM	Prep Date			
Client ID:				Run ID:	INIC2_050823A			SeqNo:	526109				
Analyte			Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	% RPD	RPDLimit	Qual
Nitrate (as Nitrogen)		ND	0.10										
Sample ID	MB-14084P	Batch ID:	14084	Test Code:	ICPX	Units:	µg/L	Analysis Date	8/26/05 3:37:00 PM	Prep Date	8/23/05		
Client ID:				Run ID:	INICP1_050826A			SeqNo:	527043				
Analyte			Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	% RPD	RPDLimit	Qual
Iron		ND	100										
Manganese		ND	2.0										

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

North Coast Laboratories, Ltd.

Date: 02-Sep-05

QC SUMMARY REPORT
Laboratory Control Spike

CLIENT: Pvt. cust. paying on pickup
 Work Order: 0508642
 Project: 004323, Rio Dell Texaco

Sample ID	LCS-05551	Batch ID:	R36660	Test Code:	8260OXYW	Units: µg/L		Analysis Date	8/29/05 5:23:00 AM	Prep Date		
Client ID:				Run ID:	ORGCMS3_050829B <th></th> <th></th> <th>SeqNo:</th> <td>527629</td> <th></th>			SeqNo:	527629			
Analyte		Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)		20.94	1.0	20.0	0	105%	80	120	0	0		
Tert-butyl alcohol (TBA)		434.3	10	400	0	109%	25	162	0	0		
Di-isopropyl ether (DIPE)		21.45	1.0	20.0	0	107%	80	120	0	0		
Ethyl tert-butyl ether (ETBE)		21.04	1.0	20.0	0	105%	77	120	0	0		
Benzene		22.80	0.50	20.0	0	114%	78	117	0	0		
Tert-amyl methyl ether (TAME)		20.88	1.0	20.0	0	104%	64	136	0	0		
Toluene		19.65	0.50	20.0	0	98.2%	80	120	0	0		
Ethylbenzene		18.75	0.50	20.0	0	93.8%	80	120	0	0		
m,p-Xylene		38.58	0.50	40.0	0	96.4%	80	120	0	0		
o-Xylene		17.44	0.50	20.0	0	87.2%	80	120	0	0		
1,4-Dichlorobenzene-d4		1.10	0.10	1.00	0	110%	81	139	0	0		
Sample ID	LCS-05551	Batch ID:	R36660	Test Code:	8260OXYW	Units: µg/L		Analysis Date	8/29/05 5:49:00 AM	Prep Date		
Client ID:				Run ID:	ORGCMS3_050829B <th></th> <th></th> <th>SeqNo:</th> <td>527630</td> <th></th>			SeqNo:	527630			
Analyte		Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)		21.13	1.0	20.0	0	106%	80	120	20.9	0.911%	20	
Tert-butyl alcohol (TBA)		445.0	10	400	0	111%	25	162	434	2.44%	20	
Di-isopropyl ether (DIPE)		21.61	1.0	20.0	0	108%	80	120	21.4	0.732%	20	
Ethyl tert-butyl ether (ETBE)		21.22	1.0	20.0	0	106%	77	120	21.0	0.865%	20	
Benzene		22.83	0.50	20.0	0	114%	78	117	22.8	0.0921%	20	
Tert-amyl methyl ether (TAME)		21.01	1.0	20.0	0	105%	64	136	20.9	0.608%	20	
Toluene		19.76	0.50	20.0	0	98.8%	80	120	19.6	0.598%	20	
Ethylbenzene		18.89	0.50	20.0	0	94.4%	80	120	18.8	0.716%	20	
m,p-Xylene		38.59	0.50	40.0	0	96.5%	80	120	38.6	0.0382%	20	
o-Xylene		17.38	0.50	20.0	0	86.9%	80	120	17.4	0.344%	20	
1,4-Dichlorobenzene-d4		1.11	0.10	1.00	0	111%	81	139	1.10	0.192%	20	

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Pvt. cust. paying on pickup
Work Order: 0508642
Project: 004323, Rio Dell Texaco

QC SUMMARY REPORT
Laboratory Control Spike

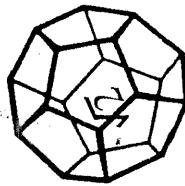
Sample ID	LCS-05552	Batch ID:	R36659	Test Code:	GASW-MS	Units:	µg/L	Analysis Date	8/29/05 7:06:00 AM	Prep Date				
Client ID:				Run ID:	ORGCMS3_050829A			SeqNo:	527608					
Analyte				Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	% RPD	RPDLimit	Qual
TPHC Gasoline		916.3	50	1,000	0	91.6%		80	120		0			
Sample ID	LCS-05552	Batch ID:	R36659	Test Code:	GASW-MS	Units:	µg/L	Analysis Date	8/29/05 7:31:00 AM	Prep Date				
Client ID:				Run ID:	ORGCMS3_050829A			SeqNo:	527609					
Analyte				Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	% RPD	RPDLimit	Qual
TPHC Gasoline		924.9	50	1,000	0	92.5%		80	120		91.6	0.934%	20	
Sample ID	LCS 08230501	Batch ID:	R36565	Test Code:	ICIONW	Units:	mg/L	Analysis Date	8/23/05 1:26:15 PM	Prep Date				
Client ID:				Run ID:	INIC2_050823B			SeqNo:	526221					
Analyte				Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	% RPD	RPDLimit	Qual
Sulfate		9.889	0.50	10.0	0	98.9%		90	90	110	0			
Sample ID	LCS 08230501	Batch ID:	R36561	Test Code:	ICNOW	Units:	mg/L	Analysis Date	8/23/05 1:26:15 PM	Prep Date				
Client ID:				Run ID:	INIC2_050823A			SeqNo:	526110					
Analyte				Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	% RPD	RPDLimit	Qual
Nitrate (as Nitrogen)		1.003	0.10	1.00	0	100%		90	90	110	0			
Sample ID	LCS-14084P	Batch ID:	14084	Test Code:	ICPX	Units:	µg/L	Analysis Date	8/26/05 3:40:00 PM	Prep Date				
Client ID:				Run ID:	INICP1_050826A			SeqNo:	527044					
Analyte				Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	% RPD	RPDLimit	Qual
Iron		480.4	100	500	0	96.1%		85	115	0				
Manganese		477.7	2.0	500	0	95.5%		85	115	0				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

NORTH COAST LABORATORIES LTD.



5680 West End Road • Arcata • CA 95521-9202
707-822-4649 Fax 707-822-6831

Chain of Custody

0708642

Attention:	Dorothy Bianchi		
Results & Invoice to:	1155 Hiller Road		
Address:	McKerriver, CA 95517		
Phone:	839-3089 Roland Rueber		
Copies of Report to:	Shn Roland Rueber		
Bld W. Wabash Ave. Eureka, CA 95501-3138			
Sampler (Sign & Print):	David R. Pain David R. Pain		
PROJECT INFORMATION			
Project Number:	004323		
Project Name:	Rin Dell Texaco		
Purchase Order Number:			

ANALYSIS	CONTAINER PRESERVATIVE	DATE	TIME	MATRIX*
6		8/26/00	11:57:1	DW, SW, Inf, Fe + Mn
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